

Claims:

1. An isolated polypeptide which is a heptad portion of a Henipavirus F
5 protein that functions to inhibit fusion of a membrane of a paramyxovirus and a
plasma membrane of a cell.
2. The polypeptide of claim 1 wherein said polypeptide comprises a
biologically active fragment of a heptad portion of a Henipavirus F protein that
functions to inhibit fusion of a membrane of a paramyxovirus and a plasma
10 membrane of a cell.
3. The polypeptide of claims 1-2 wherein said polypeptide comprises a
deletion, substitutional, or insertional variant of a heptad portion of a Henipavirus F
protein that functions to inhibit fusion of a membrane of a paramyxovirus and a
plasma membrane of a cell.
- 15 4. The polypeptide of claims 1-3 wherein said polypeptide is
recombinant.
5. The peptide of claims 1-4 wherein the polypeptide is derived from
HeV or NiV.
6. A polypeptide that comprises the polypeptide sequence of SEQ ID
20 NO 1 or SEQ ID NO 2.
7. The polypeptide of claim 6 wherein said polypeptide comprises a
biologically active fragment of SEQ ID NO 1 or SEQ ID NO 2.
8. The polypeptide of claims 6-7 wherein said polypeptide comprises a
deletion, substitutional, or insertional variant of SEQ ID NO 1 or SEQ ID NO 2.

9. The polypeptide of claims 6-8 wherein said polypeptide is recombinant.
10. The peptide of claims 6-9 wherein the polypeptide is derived from HeV or NiV.
- 5 11. A pharmaceutical composition comprising an effective amount of a polypeptide sequence of SEQ ID NO 1 or SEQ ID NO 2 and a pharmaceutically acceptable carrier.
12. The composition of claim 11 comprising a biologically active fragment of SEQ ID NO 1 or SEQ ID NO 2.
- 10 13. The composition of claims 11-12 comprising a deletion, substitutional, or insertional variant of SEQ ID NO 1 or SEQ ID NO 2.
14. The composition of claims 11-13 wherein the composition is a therapeutic or post-exposure prophylactic.
- 15 15. The composition of claims 11-13 wherein the composition is a vaccine.
16. A method for inhibiting fusion between a membrane of a paramyxovirus and a plasma membrane of a cell comprising administering a composition according to claims 11-15.
17. The method of claim 16 wherein said paramyxovirus is of the genus
20 *Henipavirus*.
18. The method of claims 16 or 17 wherein said paramyxovirus is of the subfamily *Paramyxovirina*.

19. The method of claims 16-18 wherein said paramyxovirus is HeV or NiV.
20. An isolated polynucleotide sequence encoding a polypeptide that inhibits fusion between a membrane of a paramyxovirus and a plasma membrane of a cell, wherein said polynucleotide sequence selected from the group consisting of:
- 5 a DNA sequence encoding a polypeptide of SEQ ID NO 1; and
a DNA sequence capable of hybridizing under high stringency conditions to the complement of a DNA sequence encoding a polypeptide of SEQ ID NO 1.
- 10 21. A vector comprising a polynucleotide sequence of claim 20.
22. A cell comprising a polynucleotide sequence of claim 20.
23. A method for treating infection with a virus, comprising administering the composition of claims 11-15.
24. The method of claim 23 wherein said virus is a paramyxovirus.
- 15 25. The method of claims 23 or 24 wherein said paramyxovirus is of the genus *Henipavirus*.
26. The method of claims 23-25 wherein said virus is HeV or NiV.
27. An aptamer of a heptad portion of a Henipavirus F protein that functions to inhibit fusion of a membrane of a paramyxovirus and a plasma
20 membrane of a cell.
28. An aptamer of a polypeptide sequence of SEQ ID NO 1 or SEQ ID NO 2.

29. The biologically active fragment of an aptamer of claims 27 or 28.
30. A method for inhibiting fusion between a membrane of a paramyxovirus and a plasma membrane of a cell comprising administering an effective amount of an aptamer of claims 27-29.